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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,539	03/27/2006	Henryk Frenzel	2003P12502	7154
24131 7590 11/02/2007 LERNER GREENBERG STEMER LLP P O BOX 2480 HOLLYWOOD, FL 33022-2480			EXAMINER CHIAM, DINH D	
			ART UNIT 2883	PAPER NUMBER
			MAIL DATE 11/02/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/573,539

Applicant(s)

FRENZEL, HENRYK

Examiner

Erin D. Chiem

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 14, 22-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al. (US 2001/0050717 A1).

Regarding claim 14, Yamada discloses an optical module comprising: a circuit carrier (5), a non-packaged semiconductor device flip-chip mounted (Para [0042]) on said circuit carrier, a lens unit (2) disposed for projecting electromagnetic radiation onto said semiconductor device, said lens unit including a lens holder and a lens assembly with at least one lens (3), and said circuit carrier having at least one relatively thin region and a relatively thick region supporting said thin region ('21', '5').

Regarding claims 22-23, the thin region and the thick region are implemented as a molded interconnect device with integrated conductor tracks (printed circuit board), wherein the thin region is a flexible circuit board and the thick region is a rigid printed circuit board (Para [0041]-[0044]).

Regarding claims 24-29, examiner considers the screws formed in the layer labeled '21' of Fig. 3 to be support elements such that the support elements at least partially formed on said

lens holder which is mounted on the circuit carrier, thus the circuit carrier forms a part of said lens unit..

Regarding claim 30, wherein the semiconductor device is disposed on a side of said circuit carrier facing *away* from said lens unit and the thin region of the circuit carrier is formed with an opening enabling through projection of electromagnetic radiation from said lens assembly onto said semiconductor device (See figs.9, 11, 12-15, and 18 for example).

Regarding claim 31, wherein the optical system comprising at least one optical module according to claim 14, see Fig. 20.

Claims 14, 16-19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoshino et al. (EP-1081944 A2).

Referring to Fig. 3B and Fig. 4, Hoshino discloses an optical module comprising a circuit carrier (10), a non packaged semiconductor device flip-chip (11 and Para [0042]) wherein the semiconductor is disposed in said thin region of said circuit carrier. The thick region is at least frame-shaped (Fig. 4). The thick region (13) is a rigid portion of said circuit board comprises a portion of a multilayer printed circuit board.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada in view of Nakajoh (US 2003/0025825 A1).

Yamada discloses the invention of claim 1, however Yamada does not disclose the lens holder is supported in said thin region of said circuit carrier. Nakajoh discloses an optical module comprising a circuit carrier (11) a non packaged semiconductor device flip-chip mounted on said circuit carrier (272), a lens (15) unit disposed for projecting electromagnetic radiation onto said semiconductor device, said lens unit including a lens holder (13) and the lens holder is supported in said thin region of said circuit carrier. It would have been obvious to one having ordinary skill in art to recognize the art of Yamada would be modifiable by the disclosure of Nakajoh prior art and a motivation for one in the art to modify is to reduce the assembly cost.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada in view of Kothmeier (US 2003/0193609 A1). Yamada does not explicitly disclose the circuit carrier thick region is a rigid portion of an FR4 circuit board. Kothmeier discloses an optical carrier and housing arrangement for receiving a color splitter system and several image converters utilizes an optical carrier comprising of a FR4 (flame resistance 4) circuit board. The motivation for utilizing FR4 circuit board is a convention in the art of electronics as disclosed by Kothmeier (Para [0016]).

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*Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin D. Chiem whose telephone number is (571) 272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erin D Chiem  
Examiner  
Art Unit 2883



Frank G. Font  
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